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**Effect of fresh leaves and aqueous leaf extracts of five medicinal plant species
on survival, oviposition and adult emergence of Cowpea bruchid
Callosobruchus maculatus (Fab.)**

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The Cowpea bruchid, *Callosobruchus maculatus*, (F.) is a major storage pest of cowpea (*Vigna unguiculata* L.) seeds in Sri Lanka. The present study was carried out to study the effect of fresh leaves and aqueous leaf extracts of five medicinal plants namely, *Pandanus amaryllifolius*, *Murraya koenigii*, *Vitex negundo*, *Pavetta indica* and *Croton aromaticus* on survival, oviposition and adult emergence of Cowpea bruchid *Callosobruchus maculatus* at $28 \pm 2^{\circ}\text{C}$ and $70 \pm 5\%$ relative humidity (RH) under the laboratory conditions. The fresh leaves were applied separately at rates of 0.0 g/20 g (control), 2 g/20 g and 5.0 g/20 g of cowpea seeds providing direct contact with the insect pest to assess contact toxicity while the effect of five different concentrations (10%, 30%, 50%, 70% and 90%) of aqueous extract of these plants were tested against oviposition and adult emergence of *C. maculatus*. For each treatment four containers were prepared. Five pairs of adult *C. maculatus* were introduced in to each container. Aqueous extract of these plants were prepared according to a reported method. Briefly, 300 g of each powdered plant material was taken into a 2 L capacity conical flask. Then 1000 mL of distilled water was added to it. It was shaken for 24 hrs using a mechanical shaker and kept for 48 hrs. The extract was separated using fine muslin cloth and volume was made up to 1000 mL. Results of contact toxicity assay showed that among the five plant species, *C. aromaticus* were most effective against the adult *C. maculatus* causing 65.45% ($F_{5, 18} = 9.01$; $P=0.00$) and 83.25% ($F_{5, 18} = 24.33$, $P=0.00$) mortality at 2 g and 5 g/20 g of cowpea seeds, respectively, four days after exposure to the leaves. The minimum number of eggs laid 33.5 ($F_{5, 18} = 909.93$, $P=0.00$) were observed in the samples treated with fresh leaves of *C. aromaticus* at rate 5 g/20 g of cowpea seeds while the minimum percentage progeny development 19.35% ($F_{5, 18} = 111.18$, $P=0.00$) were observed in the samples treated with fresh leaves of *C. aromaticus* at rate 5 g/20 g of cowpea seeds. Maximum oviposition deterrent activity was observed in *C. aromaticus* at 90% concentration (55.02%) ($F_{4, 15} = 133.15$, $P=0.00$). Minimum F1 adult emergence was higher in *C. maculatus* seeds treated with *C. aromaticus* at 90% concentration 46.00 ($F_{5, 18} = 327.43$, $P=0.00$). Results of this study clearly indicated that *C. aromaticus* “Wel Keppetiyā”, had the highest effect on *C. maculatus* thus has a potential to be used as a grain protectant against *C. maculatus*.

Keywords: *Callosobruchus maculatus*, *Croton aromaticus*, *Murraya koenigii*, *Pandanus amaryllifolius*, *Pavetta indica*, *Vitex negundo*